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DISCUSSION AND CORRESPONDENCE

THE PELYCOSAURIAN MANDIBLE

TEN years ago I figured and described a peculiar bone in the plesiosaurian mandible, lying along the teeth on the inner side and meeting its mate in the symphysis. It was in form and position so totally unlike the coronoid bone of other reptiles that I hesitated long before calling it that. Within the past few years, however, Dr. Andrews has recognized the same bone in certain European plesiosaurs, and its identity seems assured.

Some time ago I made out with considerable confidence a similar structure in the mandible of *Dimetrodon*, from the Permian of Texas, but, in the absence of corroborative proof, I have waited till an abundance of material has confirmed beyond dispute the presence of a bone in the mandible lying along the teeth and reaching nearly to the symphysis. It is narrow and rather loosely attached to the dentary, so much so that it is usually macerated away and lost. It lies along the alveolar border, beginning in an acute point opposite the middle of the third tooth, and extends apparently quite to the end of the tooth series. For most of its extent it is bordered below by the splenial, which diverges from it in front opposite the posterior end of the symphysis to enclose a V-shaped tongue of the dentary. It lies closely applied to the bases of the teeth, covering over the alveolar pits for the growth of new teeth. It apparently ends below the last tooth by a narrow end, but it is not improbable that it is very narrowly continuous with the true coronoid, and if so is quite identical with the structure in the plesiosaurs. The true coronoid lies at the summit of the coronoid eminence, extending about two inches back of the teeth. It is covered on the outer side by the dentary, and is inserted in a pit in the surangular; it is usually lost in specimens of *Dimetrodon*. If it is continuous with the alveolar bone, as it seems to be, the connection must be very narrow. I doubt not that it is homologous with the bone called epicoronoid by Watson in the *Stegocephalia*, even as the

alveolar bone is homologous with his so-called coronoid.

The splenial, hitherto undescribed in the Pelycosauria, is a large element lying along the lower side of the mandible, visible from the outer side and entering extensively into the symphysis. As I have previously stated, and as reaffirmed by Watson, this symphyseal union of the splenial is characteristic of all primitive reptiles, and evidently also, of all primitive amphibians. To nearly as far as its middle the splenial is bordered above on the inner side by the alveolar bone already described. Back of its middle it is separated from that bone by the slender prolongation of the prearticular, precisely as in the plesiosaurs.

This resemblance of the structure of the mandible in the pelycosaurs with that of the plesiosaurs has an important bearing on any theory of the phylogeny of the latter group. They could not have originated from any forms in which the coronoid had been reduced to the condition in all modern reptiles.

Full descriptions and figures of the mandible, not only of *Dimetrodon*, but also of various other Permian reptiles and amphibians will be published within a year.

S. W. WILLISTON

UNIVERSITY OF CHICAGO,

August 25, 1913

THE DISTANCE HOUSE FLIES, BLUE BOTTLES AND STABLE FLIES MAY TRAVEL OVER WATER

LITTLE evidence exists as to how far stable and blue bottle flies ordinarily travel to or from their feeding and breeding places. House flies, it is claimed, seldom stray over 500 yards from their breeding places; but some English observations prove that they may go over a mile from an infested dump to the nearest village.

In connection with the Cleveland Anti Fly Campaign, urgent requests were sent in to Dr. Jean Dawson for some means of relief from the plague of flies on the cribs of the water works, situated a mile and a quarter, five miles and six miles out in Lake Erie north of the city. Being in Cleveland for a

few days, at the request of Dr. Dawson and Mr. Vandusen, of the water works department, I visited the three cribs. The department launch left the harbor about ten o'clock of the morning of August 21, steaming directly to the nearest crib, a mile and a quarter out. Two house flies came out with the launch. A light breeze was blowing from the south, possibly six to eight miles an hour, and it carried the intensely acrid, sulphurous smoke of the city out over the lake. For nearly a mile out this smoke was so strong that it made my eyes smart and run tears, and quite possibly this low sheet of smoke may have had something to do with driving the flies out of the harbor. I found this first crib swarming with flies. In a lot caught at random I counted 41 house flies, 9 stable flies and 4 blue bottles.

From this crib we steamed out to the six-mile crib. Here the flies were even more numerous than on the first crib or even anywhere about the docks. My catch here was 10 house flies, 22 stable flies and 1 blue bottle. Possibly twenty stable flies followed us into the launch and over to the five-mile crib. My catch here was from a trap baited with sugar and water with a few drops of vinegar added: 4 house flies, 25 stable flies and 12 blue bottles.

Two crib tenders live on each crib, but there are no animals and there is absolutely nothing in which flies of any kind could breed. All garbage and waste matters are dumped immediately into the lake or are put into a tight incinerator and burned daily. Lake steamers pass within about half a mile of the cribs, but none of the men had ever noticed any evidence of flies coming from them. All the crib tenders maintain that a south wind brings a cloud of flies from the city and that a north wind carries them away. No smaller boats were anywhere near the cribs that day and seldom come near them.

The only explanation for the above facts seems to be that the flies are blown at least six miles off shore, and that they gather on the cribs as temporary resting places. Attraction of any other sort can not be a strong factor: else they would remain on shore, at-

tracted by the animals and men along the docks and the much richer food supply. While not entirely conclusive, the evidence seems strongly to support the theory that flies of the above kinds are able to travel much farther than is commonly supposed.

All the flies in the crib appeared to be ravenously hungry and it will not be difficult to trap the house and blue bottle flies as fast as they come. The stable flies bite most viciously, but they, too, enter the traps in numbers, and it is quite probable that all the flies on the cribs can be killed most easily with formalin bottles, 2.5 per cent. in a milk or beer or sugar and vinegar mixture, whichever may prove most attractive to them.

C. F. HODGE

THE WORD "FUNGUS"

TO THE EDITOR OF SCIENCE: He is a brave man who openly throws stones at another man's domicile, even if he justify the act as altruistic, knowing the proverbial danger incurred. Certainly he should not be surprised by some return.

In SCIENCE of September 5 Dr. Dabney has justly taken exception to the use of the common expression "quite a few." But he has erred in calling it "slangy," "a malevolent fungus growth," or "a sort of fad." It is simply a colloquial term in certain parts of the country, and occasionally slips into dignified writing, as do other indefensible phrases. But they are not becoming established, as Dr. Dabney implies; the tendency is quite the reverse. When all scientific men shall have been recruited from the ranks of the learned, such unpleasant evidences of the survival of youthful derelictions of speech will have disappeared.

Having taken notice of Dr. Dabney's fling, I offer one in return. One must be doubly surprised to notice that in a criticism of a colleague regarding "good English," there occurs a lapse in "good grammar." What justification is there for the usage "fungus growth?" Possibly the phraseology is in recognition of the increasing demand for hyphenated substantives, with the hyphen dropped out. Or